

ADDITIONAL NOTES ON THE GENUS PETREA. VI

Harold N. Moldenke

PETREA ARBOREA H.B.K., Nov. Gen. & Sp. Pl. 2: 282--283 [as "Petraea"]. 1818; Spreng., Syst. Veg. 2: 761. 1825.

Additional synonymy: Petrea arborea Humb. & Bonpl. ex Steud., Nom. Bot., ed. 1, 606. 1821. Petrea arborea Humb. ex Spreng., Syst. Veg. 2: 761. 1825. Petroea arborea H.B.K. ex Neumann, Ann. Fl. Pom. 1837-1838: 254--255. 1838. Petrea erecta Hort. ex Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea arborea Kunth ex Schau. in A. DC., Prodr. 11: 619. 1847. Petrea erecta Lodd. ex Schau. in A. DC., Prodr. 11: 619, in syn. 1847. Petrea vincentiana Turcz. ex Moldenke in Fedde, Repert. 43: 25, in syn. 1938. Petraea arborea Kunth ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940. Petraea arborea L. ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940. ?Verbena arborea H.B.K. ex Beltrán, Cat. Sem. Hort. Bot. Univ. Valentin. 1948: 26, hyponym. 1948 [not V. arborea Hort., 1959]. Petraea arborea Rich. ex Moldenke, Résumé 330, in syn. 1959.

Literature: H.B.K., Nov. Gen. & Sp. Pl. 2: 282--283. 1818; Steud., Nom. Bot., ed. 1, 606. 1821; Spreng., Syst. Veg. 2: 761. 1825; Lodd., Bot. Cab. 17: pl. 1606. 1830; Neumann, Ann. Fl. Pom. 1837-1838: 254--255. 1838; Steud., Nom. Bot., ed. 2, 2: 309. 1841; Schau. in A. DC., Prodr. 11: 619. 1847; Griseb., Fl. Brit. West Ind. 498. 1861; Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (2): 212. 1863; Jacks., Ind. Kew. 2: 478. 1894; Velenovsky, Vergl. Morphol. Pfl. 3: 923 & 1194, pl. 9, fig. 25. 1910; H. J. Lam, Verbenac. Malay. Arch. addenda. 1919; Standl., Contrib. U. S. Nat. Herb. 23: 1237. 1924; Britton & P. Wils., Scient. Surv. Porto Rico 6: 152. 1925; Standl., Contrib. U. S. Nat. Herb. 27: 321--322. 1928; Stapf, Ind. Lond. 5: 39. 1931; Potbury, Carnegie Inst. Wash. Publ. 465: 35, 36, & 79. 1935; Moldenke in Fedde, Repert. 43: 13, 22--26, 209--218, & 220. 1938; Moldenke, Lilloa 4: 308--309. 1939; Moldenke, Geogr. Distrib. Avicenn. 12, 20, 21, & 39. 1939; Moldenke, Alph. List Common Names 5 & 19. 1939; Moldenke, Suppl. List Common Names 23. 1940; Moldenke, Prelim. Alph. List Invalid Names 34--35. 1940; Moldenke, Carnegie Inst. Wash. Publ. 522: 189--190. 1940; Moldenke in Pulle, Fl. Surin. 4 (2): 290. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 30, 32, 33, 73, & 97. 1942; Moldenke, Alph. List Invalid Names 34--35. 1942; Moldenke, Phytologia 2: 108 (1945) and 2: 173--174. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Beltrán, Cat. Sem. Hort. Bot. Univ. Valentin. 1948: 26. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 57, 61, 64, 66, 162, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Anal. Inst. Biol. Mex. 22: 421. 1951; Menninger, 1955 Price List n.p. &

12. 1954; Moldenke in Cheesman, Fl. Trin. & Tob. 2 (6): 400 [repr. 19]. 1955; Menninger, 1956 Price List [7]. 1955; Alain in León & Alain, Fl. Cuba 4: 298. 1957; Menninger, 1957 Price List [6] (1957), 1958 Price List [5] (1958), and 1959 Price List [4]. 1958; Moldenke, Résumé 63, 68, 72, 76, 220, 330--333, 335, 357, & 464. 1959.

Illustrations: Lodd., Bot. Cab. 17: pl. 1606 (in color). 1830.

Collectors describe the calyx of this plant as blue-purple or lilac. Menninger says "This Trinidad small evergreen tree, with very rough 4-inch leaves, bears profuse sprays of violet flowers three times a year much like the magnificent Petrea vine we know in Florida. The calyx is a lighter shade of purple than the corolla; the latter soon falls, but the calyx persists, turning ash-gray with age, like some of the people I know. This tree's natural occurrence even in Trinidad is 'extremely rare'. In bloom 'the tree is highly ornamental', wrote Marshall. 'One of the handsomest of Central American plants', wrote Standley, 'because of the abundance of blue flowers'. Standley's plant and the Florida vine referred to here are actually P. volubilis L. Menninger offers P. arborea at the rate of \$2 for 4--6-inch seedlings, or \$3 a foot for 6-inch to 2-foot tall plants.

Wurdack & Monachino describe the species as a shrub 2.5 meters tall, with lavender-purple corollas, the lower lobe white at the base, and the tube white, locally frequent at altitudes of 110--520 meters, flowering in January. Common names recorded for it are "blue-petrea", "blue tree petrea", "blue-wreath", "lilac", "nacareno", "tosatido", "tostadito", and "tree petrea" -- the last of these is applied also to P. kohautiana Presl, while "tostadito" is applied also to P. aspera Turcz.

The Verbena arborea Hort. mentioned in the synonymy above applies to V. litoralis H.B.K. and it is possible that the binomial listed by Beltrán may also belong there. Broadway's initials are consistently reversed to "E. W." for some unknown reason in some herbaria.

Additional citations: TRINIDAD: W. E. Broadway s.n. [June 12th, 1920] (Um--163, Vi, Vi); Fendler 557 (Pa). VENEZUELA: Aragua: Delgado 101 (Ve--12735), 135 (Ve--12732); Vogl 298 (N). Bolívar: Wurdack & Monachino 41293 (N, S). Federal District: Pittier 9449 (Ve--12737). State undetermined: Curran 577 (N). CULTIVATED: Trinidad: W. E. Broadway s.n. [Aug. 27, 1932] (B); Ewan 16990 (Tl).

PETREA ARBOREA var. BROADWAYI Moldenke

Literature: Moldenke in Fedde, Repert. 43: 13, 26, 210, & 212. 1938; Moldenke, Geogr. Distrib. Avicenn. 39. 1939; Moldenke, Alph. List Common Names 6. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 73 & 97. 1942; Moldenke, Phytologia 2: 108 (1945) and 2: 174. 1946; H. N. & A. L. Molauken, Pl. Life 2: 51. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 162 & 192. 1949; Moldenke in Cheesman, Fl. Trin. & Tob. 2 (6): 400 [repr. 19]. 1955; Moldenke, Résumé 220 & 464. 1959.

A common name recorded for this variety is "bridal-wreath", which is a name applied also to P. kohautiana var. alba (Freeman &

Williams) Moldenke.

PETREA ASPERA Turcz.

Additional and corrected literature: Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (2): 211. 1863; Jacks., Ind. Kew. 2: 478. 1894; Standl., Contrib. U. S. Nat. Herb. 27: 322. 1928; Moldenke in Fedde, Repert. 43: 14, 201--204, & 210--221. 1938; Moldenke, Geogr. Distrib. Avicenn. 18--20, 22, 26, & 39. 1939; Moldenke, Alph. List Common Names 4, 12, 27, & 33. 1939; Moldenke, Suppl. List Common Names 23. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24, 31--33, 38, 73, & 97. 1942; Moldenke, Phytologia 2: 108 (1945), 2: 174--175 (1946), and 2: 499. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 41, 61, 64, 68, 89, 162, & 192. 1949; F. C. Hoehne, Ind. Bibl. & Num. Pl. Col. Com. Rondon 349. 1951; Moldenke, Résumé 48, 68, 72, 78, 103, 220, 330, & 464. 1959; Moldenke, Résumé Suppl. 1: 5. 1959.

This plant is described by collectors as a large liana, climbing to 15 meters, or a slender tree, 4--6 meters tall, the inflorescence drooping, from nodes of the older stems, the "flowers" deep-blue, the calyx lavender or the calyx-tube green and the lobes blue, the corolla purple or the lobes bluish-purple.

It has been found at the edge of woods, at altitudes of 30 to 720 meters, blooming from February to June and in November, in fruit in February, June, and July. Wurdack & Monachino report it occasional in forests. Additional common names are "primavera" and "tostadito", the latter being a name also applied to P. arborea H.B.K. The label of Ll. Williams 11475 actually gives the name P. arborea H.B.K. as a synonym of this species, which is entirely incorrect. The two species are actually very distinct from each other.

Additional citations: PANAMA: Canal Zone: P. H. Allen 960 (E--1121191, N, S); F. H. Elmore L.41 (M1); Moldenke & Moldenke 19800 [Barro Colorado Island] (Es, Lg, N, N, Ot, Sm). Panamá: P. H. Allen 658 (E--1121306); Hunter & Allen 658 (N, S). COLOMBIA: Antioquia: Haught 4791 (N). Bolívar: Sneidern 5765 (S). VENEZUELA: Aragua: Vogl 299 (N); Ll. Williams 10077 (Ve--12748), 10160 (Ve--12747). Bolívar: Ll. Williams 11475 (Ca--734087, Ew, Ve--12749). Carabobo: Tamayo 2223 (Ve--12741). Delta Amacuro: Wurdack & Monachino 39641 (N). Miranda: Aristeguieta 2868 (N). Yaracuy: Killip 37068 (N). BRAZIL: Matto Grosso: J. G. Kuhlmann 1295 (Sp--31977).

PETREA ATROCOERULEA Moldenke

Literature: Moldenke in Fedde, Repert. 43: 16, 195--197, 210, 216, & 218--220. 1938; Moldenke, Geogr. Distrib. Avicenn. 19, 23, & 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 35, 38, & 97. 1942; Moldenke, Phytologia 2: 175. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 73, 89, & 192. 1949; Moldenke, Résumé 68, 84, 103, & 464. 1959.

Schultes describes this plant as a frail treelet with blue bracts, and found it at about 100 meters altitude.

Additional citations: COLOMBIA: Amazonas: R. E. Schultes 6063 (W--1988458).

PETREA BLANCHETIANA Schau.

Additional synonymy: Petraea blanchetiana Schau. ex Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 158. 1894. Petraea latifolia P. DC. apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947.

Literature: Schau. in A. DC., Prodr. 11: 617--618. 1847; Schau. in Mart., Fl. Bras. 9: 273 & 307, pl. 45, fig. 1. 1851; Jacks., Ind. Kew. 2: 478. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 158. 1894; Stapf, Ind. Lond. 5: 39. 1931; Moldenke in Fedde, Repert. 43: 14, 166--168, 210--214, & 217--220. 1938; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Prelim. Alph. List Invalid Names 34. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38 & 97. 1942; Moldenke, Alph. List Invalid Names 34. 1942; Moldenke, Phytologia 2: 175. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 50. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89 & 192. 1949; Moldenke, Résumé 103, 330--332, & 464. 1959.

Illustrations: Schau. in Mart., Fl. Bras. 9: pl. 45, fig. 1. 1851.

PETREA BRACTEATA Steud., Flora 26: 764 [as "Petraea"]. 1843;

Schau. in A. DC., Prodr. 11: 620. 1847.

Additional synonymy: Petraea bracteata H.B.K. ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940. Petraea schomburgkiana Schau. ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940. Petraea bracteosa Steud. apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947. Petraea reticulata L. C. Rich. apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947.

Additional and corrected literature: Steud., Flora 26: 764. 1843; Schau. in A. DC., Prodr. 11: 617 & 619--620. 1847; Miq., Stirp. Surinam. [Nat. Verh. Holl. Maatsch. Wet. Haarlem, ser. 2, 7:] pl. 42. 1850; Jacks., Ind. Kew. 2: 478. 1894; H. H. Rusby, Mem. Torrey Bot. Club 6: 106. 1896; H. H. Rusby, Bull. Torrey Bot. Club 27: 81. 1900; Buchtien, Contrib. Fl. Bolivia 1: 166. 1910; Glück, Blatt- & Blütenmorphol. Stud. 382. 1919; Stapf, Ind. Lond. 5: 39. 1931; Moldenke, Phytologia 1: 17. 1933; Moldenke in Fedde, Repert. 43: 14, 161--164 & 210--221. 1938; Moldenke, Alph. List Common Names 14, 24, 25, & 27. 1939; Moldenke, Geogr. Distrib. Avicenn. 21, 22, & 26. 1939; Moldenke in Pulle, Fl. Surin. 4 (2): 287--290. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 33, 38, & 97. 1942; Moldenke, Phytologia 2: 108 (1945) & 2: 175--176. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Phytologia 2: 499. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 52 & 82. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 66--68, 89, & 192. 1949; H. N. & A. L. Mol-

denke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Résumé 72, 76--78, 103, 331, 332, & 464. 1959.

Illustrations: Glück, Blatt- & Blütenmorphol. Stud. 382. 1919.

Collectors describe this plant as a shrub to 2 meters tall, a scandent shrub, or a woody vine climbing to 30 meters, the bracts pale-purple, the flowers royal blue-purple, dark-blue, or red, the calyx lilac or lavender, the corolla purple, deep-purple, or blue. It has been found in woods on terra firma, on granitic monadnocks, in the lowlands on the border of rivers of whitish water, and "beira da mata da terra alta". Maguire says that he found it "infrequent in high forest", while Maguire & Cowan report it as "occasional in forest". On the other hand, Cowan & Lindeman say that it is "frequent in trees along riverbank clearings, forested slopes, and summits". It has been collected at altitudes of 100 to 500 meters.

The Fróes 22628 collection has deeply bullate leaves, while Murça Pires 3622 has amazingly thin and smoothish leaves. Either the species is remarkably variable or else several species are involved, as Schauer believed. If the latter is true, I have as yet been unable to ascertain the characters by which they may be distinguished. The "Collector undesignated 1708", cited by me on page 164 of my monograph, is Kappler 1708 according to Pulle, Enum. Pl. Surin. 402 (1906). Common names for the species include "hajariballi", "hayariballi", "sandpaper vine", and "sandpaper-vine" -- the last-mentioned being applied also to P. volubilis L.

Additional citations: VENEZUELA: Amazonas: Level 5 (N); Maguire, Cowan, & Wurdack 30444 (N, S); Wurdack & Adderley 43583 (N, S). BRITISH GUIANA: Appun s.n. [1872] (N); B. Maguire 40506 (N); Maguire & Cowan 39297 (N), 39344 (N). SURINAM: "B. W.", Bureau of Forestry 5111 [32] (N); Cowan & Lindeman 39221 (N, S); Florschütz & Florschütz 1127 (N); Lanjouw & Lindeman 1971 (N). BRAZIL: Amapá: Black 49-8434 (Be--53786). Amazonas: Collector undesignated 2 [Herb. Inst. Nac. Pesq. Amaz. 803] (Ok); Ducke 872 (Be--10146), 1133 (Be--10154), 2321 (Z); Francisco & Lewis s.n. [Herb. Inst. Nac. Pesq. Amaz. 3529] (Ok); Fróes 22628 (Be--32426, N). Guaporé: N. T. da Silva 446 (N). Pará: Murça Pires 3622 (Cb, N, Ss). CULTIVATED: Brazil: Ducke s.n. [19-4-1941] (Be--43395).

PETREA BREVICALLYX Ducke, Bull. Mus. Hist. Nat. Paris, sér. 2, 4: 748--749 [as "Petraea"]. 1932; J. A. Clark, Card Ind. 1933.

Additional and corrected synonymy: Petraea kuhlmannii Moldenke ex F. C. Hoehne, Resen. Hist. Sec. Bot. Inst. Biol. São Paulo 153 & 163, hyponym. 1937. Petraea kuhlmannia Moldenke in Fedde, Repert. 43: 18, in syn. 1938. Petrea kuhlmannii Moldenke in Fedde, Repert. 43: 20, in syn. 1938.

Additional and corrected literature: Ducke, Bull. Mus. Hist. Nat. Paris, sér. 2, 4: 748--749. 1932; Ducke, Archiv. Jard. Bot. Rio de Jan. 6: 87--88. 1933; F. C. Hoehne, Resen. Hist. Sec. Bot. Inst. Biol. São Paulo 153 & 163. 1937; Hill, Ind. Kew. Suppl. 9:

209. 1938; Moldenke in Fedde, Repert. 43: 14, 18--20, 210, 213, 216, 217, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38 & 97. 1942; Moldenke, Phytologia 2: 176. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 67. 1948; Occhioni, Lilloa 17: 484. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89 & 192. 1949; F. C. Hoehne, Ind. Bibl. & Num. Pl. Col. Com. Rondon 349. 1951; Moldenke, Résumé 103, 330--332, 422, & 464. 1959.

Collectors describe this species as a vine, the calyx dark-violet, and the corolla violet. It has been collected in anthesis in February, March, and November. Ducke calls it "cipó pequeno", growing in the "mata" and "igapó". A vernacular name recorded for it is "viuvinha", but this name is also applied to P. insignis Schau., P. racemosa Nees, P. martiana Schau., and P. amazonica Moldenke.

Occhioni, in the reference cited above, claims that Herb. Rio de Jan. 22544 is the type collection of P. brevicalyx, but actually it is only one of two cotype collections. The fragment of this collection, cited on page 20 of my monograph as deposited in the Britton Herbarium at New York, is now in the herbarium of Cornell University (It).

The species has occasionally been misidentified in herbaria as P. insignis.

Additional citations: BRAZIL: Amazonas: Ducke II. 140 (Be--9841); Fróes 20501 (Be--16261, N); Herb. Inst. Nac. Pesq. Amaz. 3587 (Z); J. G. Kuhlmann 2276 (Sp--31995). CULTIVATED: Brazil: Herb. Inst. Nac. Pesq. Amaz. 3349 (Ok).

PETREA COLOMBIANA Moldenke

Literature: Moldenke in Fedde, Repert. 43: 15, 174--176, 210, 216, & 219. 1938; Moldenke, Geogr. Distrib. Avicenn. 19 & 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 73, & 97. 1942; Moldenke, Phytologia 2: 176--177. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 162, & 192. 1949; Moldenke, Résumé 68, 220, & 464. 1959.

PETREA DUCKEI Moldenke

Literature: Moldenke, Phytologia 1: 469--470. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38 & 97. 1942; Moldenke, Phytologia 2: 177. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 57. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89 & 192. 1949; Moldenke, Résumé 103 & 464. 1959.

This species has been collected in anthesis in February, March, and July, and has been found on flooded land and low ground along the margins of rivers. It is described as a vine with lilac calyx and violet corollas. It has been confused in herbaria with P. swalleni Moldenke and P. insignis Schau., with which species and with P. riparia Moldenke it is certainly closely related.

Additional citations: BRAZIL: Amapá: Fróes 25774 (N). Amazonas: Ducke 688 (Be-10314); Fróes 22440 (Be-28974, N).

PETREA GLANDULOSA Pittier, Bol. Cienc. & Tecn. Mus. Com. Venez. 1: 70 [as "Petraea"]. 1925; Hill, Ind. Kew. Suppl. 7: 183. 1929.

Additional and corrected literature: Pittier, Bol. Cienc. & Tecn. Mus. Com. Venez. 1: 70. 1925; Hill, Ind. Kew. Suppl. 7: 183. 1929; Moldenke in Fedde, Repert. 43: 14, 176--177, 210, & 218. 1938; Moldenke, Geogr. Distrib. Avicenn. 20. 1939; Moldenke, Suppl. List Common Names 17. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 32 & 97. 1942; Moldenke, Phytologia 2: 177--178. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 64 & 192. 1949; Moldenke, Résumé 72, 331, & 464. 1959.

Bernardi describes this species as an upright tree, with rough leaves and white calyxes, blooming in June.

Additional citations: VENEZUELA: Mérida: Bernardi 3331 (N).

PETREA INSIGNIS Schau.

Additional literature: Schau. in A. DC., Prodr. 11: 620. 1847; Schau. in Mart., Fl. Bras. 9: 276--277 & 307, pl. 46, fig. 2. 1851; Jacks., Ind. Kew. 2: 478. 1894; Stapf, Ind. Lond. 5: 39. 1931; Moldenke in Fedde, Repert. 43: 14, 20--22, 210, 212, 213, 217, 219, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 26 & 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38, 73, & 97. 1942; Moldenke, Phytologia 2: 178. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89, 162, & 192. 1949; Moldenke, Résumé 103, 221, 331, 332, & 464. 1959.

Illustrations: Schau. in Mart., Fl. Bras. 9: pl. 46, fig. 2. 1851.

Collectors describe this plant as a liana. It has sometimes been confused in herbaria with P. duckei Moldenke. The common names "flor de S. Miguel" and "viuvinha", recorded for this species, apply also to P. racemosa Nees, while the second is applied also to P. brevicalyx Ducke.

Additional citations: BRAZIL: Amazonas: Fróes 29568 (Be-79649, Z).

PETREA KOHAUTIANA Presl

Additional synonymy: Petraea volubilis L. ex Jacq., Select. Stirp. Amer. Hist. 180--181. 1763. Petraea volubilis Jacq. ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940 [not P. volubilis L., 1753]. Petraea volubilis Griseb. ex Box, Fl. Antigua mss., in syn.; Moldenke, Résumé 333, in syn. 1959.

Additional and corrected literature: L., Hort. Cliff. 319. 1737; L., Sp. Pl., ed. 1, 626. 1753; Jacq., Select. Stirp. Amer. Hist. 180--181, pl. 114. 1763; Jacq., Select. Stirp. Amer. Hist. Picta pl. 173. 1780; Jacq., Icon. Select. Stirp. Amer. pl. 114.

1797; Presl, Bot. Bemerk. 99. 1844; Ettingsh., Blatt-Skel. Dikot. 79, pl. 28, fig. 3. 1861; Norton, Brazil. Fl. pl. 49. 1893; Jacks, Ind. Kew. 2: 478. 1894; Britton & P. Wils., Scient. Surv. Porto Rico 6: 152 (1925) & 370. 1926; Stapf, Ind. Lond. 5: 39. 1931; Potbury, Carnegie Inst. Wash. Publ. 465: 35, 36, & 79. 1935; Moldenke in Fedde, Repert. 43: 13, 15, 16, 26--31, & 209--221. 1938; Moldenke, Geogr. Distrib. Avicenn. 9--11 & 39. 1939; Moldenke, Alph. List Common Names 3, 19, 25, 27, & 33. 1939; Moldenke, Suppl. List Common Names 23. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 28, 29, 73, & 97. 1942; Moldenke, Phytologia 2: 178--179 (1946) and 2: 501. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 67. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 48, 51, 53--56, 162, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Menninger, 1954 Price List 5 & [11]. 1954; Moldenke in Cheesman, Fl. Trin. & Tob. 2 (6): 400 [repr. 19]. 1955; Moldenke, Résumé 57, 60--62, 221, 234, 331--333, & 464. 1959.

Illustrations: Jacq., Select. Stirp. Amer. Hist. 180--181, pl. 114. 1763; Jacq., Select. Stirp. Amer. Hist. Picta pl. 173. 1780; Jacq., Icon. Select. Stirp. Amer. pl. 114. 1797; Ettingsh., Blatt-Skel. Dikot. 79, pl. 28, fig. 3. 1861; Norton, Brazil. Fl. pl. 49. 1893.

Additional common names recorded for this plant are "big petrea", "purple-wreath", and "purplewreath". The name "liane rude", recorded previously for it, applies also to P. volubilis L. The Hodges state on their label "fls. deep purple, involucre lavender". Beard found the species growing in secondary forests. Menninger says of it "Rated by Chittenden as far superior to the commoner P. volubilis, this South American vine has 12-inch clusters of blue flowers." He offers 8--10-inch plants for \$15 each. Actually, the species is West Indian, not South American. The Beaupertuis s.n. [1839] cited from Paris by me on page 30 of my monograph is now in the Berlin herbarium.

Additional citations: LEEWARD ISLANDS: Dominica: P. Beard 1475 (N, S); Hodge & Hodge 3016 (Ms); R. A. Howard 11757 (N). WINDWARD ISLANDS: Martinique: Fée s.n. [1832] (Br); Hahn 270 (B); Sieber, Fl. Mart. 157 (B--isotype, B--isotype); Stehlé 5762 (Vi). St. Lucia: P. Beard 1071 (S). LOCALITY OF COLLECTION UNDETERMINED: Ponthieu s.n. [1778] (S).

PETREA KOHAUTIANA var. ALBA (Freeman & Williams) Moldenke

Additional synonymy: Petrea alba Hort. apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947.

Additional and corrected literature: Moldenke in Fedde, Repert. 43: 15, 31--32, 211, 212, 217, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 73 & 97. 1942; Moldenke, Phytologia 2: 179. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 162 & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Résumé 221, 330, 332, 333, & 464. 1959.

PETREA LONGIFOLIA Moldenke

Additional and corrected literature: Moldenke in Fedde, Repert. 43: 16, 197--199, 211, & 215. 1938; Moldenke, Geogr. Distrib. Avicenn. 41. 1939; Moldenke, Suppl. List Invalid Names 6. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 75 & 97. 1942; Moldenke, Phytologia 2: 179. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 166 & 192. 1949; Moldenke, Résumé 226, 331, & 464. 1959.

PETREA MACROSTACHYA Benth., Ann. Nat. Hist., ser. 1, 2: 448 [as "Petraea"]. 1839; Schau. in A. DC., Prodr. 11: 617. 1847.

Additional synonymy: Petrea guianensis Kunth ex Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea volubilis var.? guianensis Cham. ex Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea (volubilis?) guianensis Cham. ex Schau. in A. DC., Prodr. 11: 617, in syn. 1847. Petraea guyanensis Cham. ex Moldenke, Alph. List Invalid Names 18, in syn. 1947. Petrea volubilis var. guyanense Cham. ex Moldenke, Résumé 333, in syn. 1959.

Illustrations: Miq., Stirp. Surin. [Nat. Verh. Holl. Maatsch. Wet. Haarlem, ser. 2, 7:] pl. 42. 1850.

Additional and corrected literature: Cham., Linnaea 7: 367. 1832; Benth., Ann. Nat. Hist., ser. 1, 2: 448. 1839; Steud., Nom. Bot., ed. 2, 2: 309. 1841; Schau. in A. DC., Prodr. 11: 617. 1847; Schau. in Mart., Fl. Bras. 9: 273. 1851; Jacks., Ind. Kew. 2: 478. 1894; Stapf, Ind. Lond. 5: 39. 1931; Moldenke in Fedde, Repert. 43: 15, 204--206, 210--212, & 216--220. 1938; Moldenke, Geogr. Distrib. Avicenn. 21, 22, & 26. 1939; Moldenke, Alph. List Common Names 22. 1939; Moldenke in Pulle, Fl. Surin. 4 (2): 290. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 33, 38, & 97. 1942; Moldenke, Phytologia 2: 179--180. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; Moldenke, Phytologia 2: 499 & 501. 1948; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 66, 68, 89, & 192. 1949; Moldenke, Résumé 76, 78, 84, 103, 331--333, & 464. 1959.

Collectors describe this plant as a scandent shrub or liana, with pendent inflorescences, the "flowers" blue, blue-purple, or violet. Black says "flor (petales e calice) azul flor sendo contudo mais profundamente azul". It has been found in woods on high land and in forests along riverbanks. Ducke found it in "mata de terra retas". It has also been collected in anthesis in May, October, and November, and a common name is "murititica".

Additional citations: BRAZIL: Amapá: Cowan 38577 (N). Amazonas: Ducke 1982 (Be--20109, N); Fróes 21121, in part (N). Pará: Black 48-2954 (Be--36855, N). PERU: Loreto: Asplund 14058 (S).

PETREA MARTIANA Schau.

Additional synonymy: Petraea martiana Schau. ex LeCointe, Amaz. Brasil. III Arv. & Pl. Uteis 470. 1934.

Additional and corrected literature: Schau. in A. DC., Prodr. 11: 620. 1847; Schau. in Mart., Fl. Bras. 9: 276 & 307, pl. 46,

fig. 1. 1851; Jacks., Ind. Kew. 2: 478. 1894; Stapf, Ind. Lond. 5: 39. 1931; Moldenke in Fedde, Repert. 43: 14, 164--166, 210, 213, 215, & 217. 1938; Moldenke, Geogr. Distrib. Avicenn. 24 & 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 35, 38, & 97. 1942; Moldenke, Phytologia 2: 180. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 71. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 73, 89, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Résumé 84, 103, 331--333, & 464. 1959.

Illustrations: Schau. in Mart., Fl. Bras. 9: pl. 46, fig. 1. 1851.

Collectors describe this plant as a liana, growing in the high woods. A common name, "viuvinha", is recorded, but this name is also applied to P. brevicalyx Ducke, P. insignis Schau., and P. racemosa Nees.

Additional citations: PERU: Loreto: Murça Pires & Black 1050 (Be--18031). BRAZIL: Amazonas: Fróes 21121, in part (Be--16480).

PETREA MAYNENSIS Huber

Additional and corrected literature: Huber, Bol. Mus. Para. 4: 602. 1906; Prain, Ind. Kew. Suppl. 4: 177. 1913; Moldenke in Fedde, Repert. 43: 14, 199--201, 210, 211, 215, 216, & 218--221. 1938; Moldenke, Geogr. Distrib. Avicenn. 19, 24, 26, 28, & 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 35, 38, 40, 73, & 97. 1942; Moldenke, Phytologia 2: 180--181. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Phytologia 2: 500--501. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 73, 89, 97, 162, & 192. 1949; Moldenke, Résumé 68, 84, 103, 114, 221, 332, & 464. 1959.

Collectors describe this plant as a bush or shrub, 1.5--3 m. tall, varying to a small shrubby tree or scandent, found in semi-shade at altitudes of 150 to 550 meters, the calyx violet and the corolla deep-purple. Sandeman says that it has "pale lilac bracts", while Ducke reports "flor lilaz até violaceo-clara". He also says that it is frequently cultivated in Belém. It has been collected in anthesis also in February.

Additional citations: COLOMBIA: Amazonas or Vaupés: Schultes & Cabrera 13591 (Ss). Meta: Sandeman 5783 (K). PERU: Huánuco: Ferreyra 8100 (W--2028610). Loreto: Ferreyra 10165 (Z). BOLIVIA: El Beni: H. H. Rusby 932 (Du--382228, Pa), 933 (Pa). La Paz: M. Bang 1480 (Pa); Krukoff 10729 (S). CULTIVATED: Brazil: Ducke s.n. [25-8-1941] (Be--43396).

PETREA NITIDULA Moldenke

Literature: Moldenke in Fedde, Repert. 43: 15, 168--170, 210, 213, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 24 & 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 35, 38, & 97. 1942; Moldenke, Phytologia 2: 181. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 73, 89, & 192. 1949; Moldenke, Résumé 84, 103, & 464. 1959.

PETREA PERPLEXANS (Cockerell) MacGinitie, Carnegie Inst. Wash.

Publ. 599: 18, 39, 158, 168, & 194, pl. 51, fig. 4, & pl. 74, fig. 5. 1953.

Synonymy: Buettneria (?) perplexans Cockerell, Bull. Am. Mus. Nat. Hist. 24: 104, pl. 10, fig. 39. 1908. Carpolithes macrophyllus Cockerell, Torreya 11: 235, fig. 1. 1911.

Literature: Cockerell, Bull. Am. Mus. Nat. Hist. 24: 104, pl. 10, fig. 39. 1908; Cockerell, Torreya 11: 235, fig. 1. 1911; MacGinitie, Carnegie Inst. Wash. Publ. 599: 18, 39, 158, 168, & 194, pl. 51, fig. 4, & pl. 74, fig. 5. 1953; Moldenke, Résumé 226, 240, 249, 331, & 464. 1959.

Illustrations: Cockerell, Bull. Am. Mus. Nat. Hist. 24: pl. 10, fig. 39. 1908; Cockerell, Torreya 11: 235, fig. 1. 1911; MacGinitie, Carnegie Inst. Wash. Publ. 599: pl. 51, fig. 4, & pl. 74, fig. 5. 1953.

Known only from the flowers and fruit: calyx firm-textured, 5- (or rarely 4-) lobed, the lobes long-ovate or oblong, about 16 mm. long and 3.5 mm. wide, acute at the apex, their venation comprising a strong midrib closely flanked by a pair of short primaries which disappear through branching and anastomosing, the midrib giving rise to approximately ten pairs of opposite or subopposite secondaries which originate at 40--50° from the midrib, branched 1--3 times and forming a coarse mesh along the margins of the lobes; fruit a rounded or short-ovoid nutlet or indehiscent capsule with delicate longitudinal ridges.

The type of this species was collected in the Florissant beds, Station 14 (Rohwer), in the Miocene formations of Colorado, in 1906. MacGinitie designated two new hypotypes, which are University of California Museum of Paleobotany series numbers 3622 and 3875, also from the Florissant beds of Colorado. He points out that these calyxes may be distinguished from those of Astronium by the predominantly pinnate venation of the lobes. They match quite well those seen in the modern P. volubilis L. (referred to in error by MacGinitie as P. arborea). He states further that the Engelhardtia oxyptera Saporta as reported by Lesquereux in Rep. U. S. Geol. Surv. Terr. 8: 192 (1883) is probably also a species of Petrea, but is discarded because of the lack of a published figure. There are two other species of Petrea known from the fossil state; the others being P. borealis Ettingsh. from the Miocene of Czechoslovakia and P. rotunda Potbury from the Eocene or Lower Oligocene of California.

PETREA PERUVIANA Moldenke

Synonymy: Petraea peruviana Moldenke in Fedde, Repert. 43: 206, in syn. 1938.

Literature: Schau. in A. DC., Prodr. 11: 619. 1847; Jacks., Ind. Kew. 2: 478. 1894; Moldenke in Fedde, Repert. 43: 15, 206--208, 210, 216, & 217. 1938; Moldenke, Geogr. Distrib. Avicenn. 24. 1939; Moldenke, Prelim. Alph. List Invalid Names 34. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 35 & 97. 1942; Moldenke, Alph. List Invalid Names 34. 1942; Moldenke, Phytologia 2:

108. 1945; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 73, & 192. 1949; Moldenke, Résumé 68, 84, 331, 333, & 464. 1959.

A common name recorded for this plant is "sanango sacha". It ascends to 300 meters altitude in Vaupés.

Additional citations: COLOMBIA: Vaupés: Gutiérrez Villegas & Schultes 760 (Fn, N, N, S), 781 (Fn, N), 783 (Fn).

PETREA PUBESCENS Turcz.

Synonymy: Petraea pubescens Turcz. ex Moldenke in Fedde, Repert. 43: 170, in syn. 1938. Petraea velutina Pittier ex Moldenke in Fedde, Repert. 43: 170, in syn. 1938.

Additional and corrected literature: Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (2): 211--212. 1863; Jacks., Ind. Kew. 2: 478. 1894; Moldenke in Fedde, Repert. 43: 14, 170--172, 210--214, & 216--220. 1938; Moldenke, Geogr. Distrib. Avicenn. 19, 20, 22, 26, & 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 32, 34, 38, 73, & 97. 1942; Moldenke, Phytologia 2: 108 (1945) and 2: 181. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Phytologia 2: 500 & 502. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 64, 70, 73, 89, 162, & 192. 1949; Moldenke, Résumé 68, 72, 80, 84, 103, 221, 331, 333, & 464. 1959; Moldenke, Résumé Suppl. 1: 5. 1959.

One of the Hanbury-Tracy 136 specimens cited by me in Phytologia 2: 502 (1948) as in the Kew (K) herbarium is now in the Britton Herbarium (N) at New York.

Aristeguieta describes the species as a tree 10 meters tall, with a white calyx and pale-purple corollas, blooming in April, and called "penitente".

Additional citations: COLOMBIA: Antioquia: Toro Toro 242 (Fn--1649). Cundinamarca: H. García y Barriga 12344 (N). VENEZUELA: Barinas: Aristeguieta 3864 (N). Carabobo: Saer 831 (Ve--12739). Lara: Tamayo 3332 (Ve), 3383 (Ve). Táchira: Aristeguieta & Agostini 4113 (Z); H. García y Barriga 13314 (W--1987236). State undetermined: Chardon 20 (Ve--12730). CULTIVATED: Venezuela: Pittier 8774 (Ve--12738).

PETREA PUBESCENS var. KLUGII Moldenke

Literature: Moldenke in Fedde, Repert. 43: 15, 172--173, 210, & 216. 1938; Moldenke, Geogr. Distrib. Avicenn. 24. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 35 & 97. 1942; Moldenke, Phytologia 2: 181. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 67. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 73 & 192. 1949; Moldenke, Mem. N. Y. Bot. Gard. 9: 177. 1955; Moldenke, Résumé 80, 84, & 464. 1959.

Camp describes this as a woody plant with a pale-violet calyx and deep-violet corolla, found on uplands at 1900 feet altitude, blooming in December.

Additional citations: ECUADOR: Santiago-Zamora: Camp E.1450

(N). PERU: San Martín: Klug 4155 (Ca--709772--isotype).

PETREA RACEMOSA Nees, Flora 4 (1): 300 [as "Peraea"] & 330. 1821.

Additional synonymy: Petrea subserrata Cham. apud Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea volubilis Arrab. apud Presl, Bot. Bemerk. 99. 1844. Petraea racemosa Nees ex Moldenke in Fedde, Repert. 43: 179, in syn. 1938; Hill, Ind. Kew. Suppl. 9: 209. 1938. Petrea subserrata Cham. & Schlecht. ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940. Petraea subserrata Cham. & Schlecht. ex Moldenke, Alph. List Invalid Names Suppl. 1: 18, in syn. 1947. Petrea semiserrata Sydow apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947. Petraea racemosa Nees ex F. C. Hoehne, Relat. Annual Inst. Bot. S. Paulo 1951: 100, sphalm. 1955.

Additional and corrected literature: L., Sp. Pl., ed. 1, 626. 1753; Sim in Curtis, Bot. Mag. 17: pl. 628. 1803; Mirb., Hist. Nat. Pl. 15: pl. 104. 1805; Nees, Flora 4 (1): 300 & 330. 1831; Schrad., Götting. Gel. Anz. 1821: 712. 1821; Wied-Neuwied, Reise Bras. 1: 358 & 2: 342. 1821; Nees, Nov. Act. Physico-med. Acad. Caes. Leopold.-Car. Nat. Cur. 11: 72--73. 1823; Lodd., Bot. Cab. 8: pl. 736. 1823; Vell., Fl. Flum. 254 (1825) and Icon. 6: pl. 59. 1827; Cham., Linnaea 7: 368--370. 1832; Géel, Sert. Bot. 3, cl. 14. 1832; Knowles & Westc., Flor. Cab. 3: pl. 104. 1840; Steud., Nom. Bot., ed. 2, 2: 309. 1841; Presl, Bot. Bemerk. 99. 1844; Schau. in A. DC., Prodr. 11: 618. 1847; Schau. in Mart., Fl. Bras. 9: 274--277 & 307, pl. 45, fig. 2. 1851; Hort. Franç. 1858: pl. 6. 1858; Bocq., Adansonia 3 [Rev. Verbenac.]: pl. 20. 1863; Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (2): 211. 1863; Balfe, Garden 12: 40. 1877; Journ. Hort., ser. 3, 7: 53. 1883; Wittm., Gart.-Zeit. Berlin 3: 277. 1883; Jacks., Ind. Kew. 2: 478. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 157, fig. 60 k & l. 1894; Bois, Dict. Hort. 944. 1893--1899; L. H. Bailey, Cycl. Amer. Hort. 4: 1284. 1901; Gard. Chron., ser. 3, 39: 23. 1906; Journ. Hort., ser. 3, 54: 390. 1907; Hayek, Denkschr. Kaiser. Akad. Wissensch. Math.-nat. 79 (1): 296. 1908; Gard. Chron., ser. 3, 51: 287. 1912; L. H. Bailey, Stand. Cycl. Hort. 5: 2562. 1916; Stapf, Ind. Lond. 5: 39. 1931; Crevost & Pételot, Bull. Econom. Indo-chine 37: 1289. 1934; N. K. Gould, Journ. Roy. Hort. Soc. Lond. 61: 519. 1936; Gard. Chron., ser. 3, 102: 42. 1937; Moldenke in Fedde, Repert. 43: 13, 16, 179--188, & 210--221. 1938; Moldenke, Cult. Pl. 35. 1938; Hill, Ind. Kew. Suppl. 9: 209. 1938; Moldenke, Geogr. Distrib. Avicenn. 26, 28, & 39. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38, 41, 74, & 97. 1942; Moldenke, Phytologia 2: 182--183. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Kuhlmann & Kühn, Flor. Distr. Ibiti 116 & 181--182. 1947; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; Moldenke, Phytologia 2: 500. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89, 99, 162, & 192. 1949; Stellfeld, Trib. Farmac. 19 (10): 169 & 172. 1951; F. C. Hoehne, Relat. Annual Inst. Bot. S. Paulo 1951: 100. 1955; L. Traveso Filho, Flores do Brasil 2: 1 & 30. 1955; Moldenke, Résumé

mé 103, 117, 221, 329--333, & 464. 1959; Reitz, *Sellowia* 11: 76 & 121. 1959; Angely, *Fl. Paran.* 16: 68. 1960; Rennó, *Levant. Herb. Inst. Agron. Minas* 150. 1960.

Additional and corrected illustrations: Sim in Curtis, *Bot. Mag.* 17: pl. 628 (in color). 1803; Mirb., *Hist. Nat. Pl.* 15: pl. 104. 1805; Lodd., *Bot. Cab.* 8: pl. 736. 1823; Vell., *Fl. Flum. Icon.* 6: pl. 59. 1827; G&e, *Sert. Bot.* 3, cl. 14. 1832; Knowles & Westc., *Floral Cab.* 3: pl. 108. 1840; *Hortic. Franç.* 1858: pl. 6. 1858; Bocq., *Adansonia* 3 [Rev. Verbenac.]: pl. 20. 1863; Balfe, *Garden* 12: 40 (in color). 1877; *Journ. Hort.*, ser. 3, 7: 53. 1883; Bois, *Dict. Hort.* 944. 1893--1899; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.* 4 (3a): 157, fig. 60 k & l. 1894; L. H. Bailey, *Cycl. Amer. Hort.* 4: 1284. 1901; *Gard. Chron.*, ser. 3, 39: 24. 1906; *Journ. Hort.*, ser. 3, 54: 390. 1907; *Gard. Chron.*, ser. 3, 51: 287. 1912; L. H. Bailey, *Stand. Cycl. Hort.* 5: 2562. 1916; L. Travesso Filho, *Flôres do Brasil* 2: 1. 1955.

Rambo comments that this species is not known from Rio Grande do Sul, which is correct, but it is known from Paraná and Santa Catarina. It is described as a shrub or as scandent or subscandent, inhabiting the "mata", woods, and thickets, or "capoeira e margem de correços". The flowers are said to be blue or violet, and the species has been collected in anthesis from August to November. The *N. Y. Bot. Gard. Cult. Pl.* 38331, cited below, was grown from seed said to have come from Puerto Rico in 1913.

Petrea denticulata Schrad. is erroneously reduced to *Cordia americana* Steud. (*Patagonula americana* L.) by Steudel, *Nom. Bot.*, ed. 2, 2: 309 (1841).

Common names recorded for the species include "cambará-delixa", "capela de viuva", "capela-de-viuva", "cipó azul", "cipó de S. Miguel", "corôa de viuva", "flor de São Miguel", "flôr de São Miguel", "flor de viuca", "flôr de viuva", "lixreira", "touca-de-viuva", "touca de viúva", "violeta", and "viuvinha".

Additional citations: BRAZIL: Minas Gerais: Brade 15946 (B); P. Clausen s.n. [Aug.-April 1840] (Br); Heringer 428 (Sp-44607); Macedo 6 (Sp-49431), 1987 (N, S); Mendes Magalhaes 4257 [Herb. Jard. Bot. Belo Horiz. 45576] (N, Qu). Paraná: Hatschbach 34421 (Rb). Rio de Janeiro: Bowie & Cunningham s.n. [Sept. 5, 1815] (N); A. Lutz 816 (Hk). Santa Catarina: Mattos s.n. [23-10-52; R-20, no. 3] (Sm); Reitz 5903 (Sm); J. A. Rohr 484 (S). São Paulo: Brade 5767 (Sp-6711); Campos Novaes 267 (Sp-15631), s.n. [Campinas] (Sp-2085); Edwall 110 (Sp-15632); Gonçalves s.n. [Moinho Velho, Sept. 26, 1929] (Sp-26525); F. C. Hoehne s.n. [Butantan, Sept. 12, 1917] (Sp-518), s.n. [Parque do Estado, Oct. 5, 1931] (Sp-28316); Land 1964 (Sf); Löfgren s.n. [Herb. Comm. Geogr. & Geol. 211] (Sp-15629); Moldenke & Moldenke 19657 (Es, Lg, N); Pickel 2660 (Sf), 2832 (Sf); C. Smith 4 (Sp-32035); Swentorzecky s.n. [Guarulhos, Dec. 3, 1939] (Sp-41835); Venâncio 28 [A. Lutz 2017] (Z); A. P. Viégas 3972 (Be-36011). CULTIVATED: Brazil: W. Hoehne 2555 (Bh, It, N), 2556 (Bh, N); Moldenke & Moldenke 19604

(N), 19605 (N, Sm), 19623 (Es, Lg, N, Ot, Sm). New York: G. V. Nash s.n. [N. Y. Bot. Gard. Cult. Pl. 38331] (N).

PETREA RACEMOSA var. ALBA Kuhlmann, var. nov.

Synonymy: Petraea racemosa var. alba Kuhlmann ex Angely, Fl. Paran. 16: 68. 1960.

Literature: Kuhlmann, Flôres do Brasil 2: 30, in obs. 1955; Moldenke, Résumé 104, 221, & 464, nom. nud. 1959; Angely, Fl. Paran. 16: 68. 1960.

This variety is said by my good friend, Moyses Kuhlmann, in the reference cited above, to differ from the typical form of the species in having a white calyx and corolla. He says that it grows in the garden of his colleague, Dr. Suzana Miranda Pontes, presumably in São Paulo, Brazil, and apparently under cultivation. He says that it originated in Paraná. Since no Latin description has as yet been published as far as I am aware, I take pleasure in validating the name for him herewith: A forma typica speciei calicibus corollisque albis recedit.

PETREA RIPARIA Moldenke

Literature: Moldenke in Fedde, Repert. 43: 16, 194--195, 210, & 213. 1938; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38 & 97. 1942; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89 & 192. 1949; Moldenke, Résumé 104 & 464. 1959.

This species has been collected in anthesis or fruit in February, August, and December, and the flowers are said to be rose-colored.

Additional citations: BRAZIL: Amapá: Frôes 25871 (N). Amazonas: Frôes 25053 (N); Herb. Inst. Nac. Pesq. Amaz. 6053 (Z).

PETREA RIVULARIS Moldenke

Literature: Moldenke in Fedde, Repert. 43: 16, 191--192, 210, & 211. 1938; Moldenke, Geogr. Distrib. Avicenn. 21. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 33 & 97. 1942; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 66 & 192. 1949; Moldenke, Résumé 76 & 464. 1959.

PETREA RUGOSA H.B.K., Nov. Gen. & Sp. Pl. 2: 282 [as "Petraea"].

1818; Steud., Nom. Bot., ed. 1, 606 [as "Humb. & Bonpl."].

1821; Jacks., Ind. Kew. 2: 478. 1894.

Additional synonymy: Petrea rugosa Humb. ex Spreng., Syst. Veg. 2: 761. 1825. Petraea rugosa Kunth ex Schau. in A. DC., Prodr. 11: 619. 1847. Petraea rugosa Humb. & Bonpl. ex Moldenke, Alph. List Invalid Names Suppl. 1: 18, in syn. 1947. Petraea rugosa Kunth ex Moldenke, Alph. List Invalid Names Suppl. 1: 18, in syn. 1947.

Literature: H.B.K., Nov. Gen. & Sp. Pl. 2: 282. 1818; Steud., Nom. Bot., ed. 1, 606. 1821; Spreng., Syst. Veg. 2: 761. 1825; Steud., Nom. Bot., ed. 2, 2: 309. 1841; Walp., Repert. 4: 70.

1845; Benth., Pl. Hartw. 246. 1846; Schau. in A. DC., Prodr. 11: 619. 1847; Benth., Pl. Hartw. 358. 1857; Jacks., Ind. Kew. 2: 478. 1894; Moldenke in Fedde, Repert. 43: 14, 46--48, 210, 211, & 218. 1938; Moldenke, Geogr. Distrib. Avicenn. 19, 20, 22, & 39. 1939; Moldenke, Alph. List Common Names 8 & 20. 1939; Moldenke, Prelim. Alph. List Invalid Names 34 & 35. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31, 32, 34, 74, & 97. 1942; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Moldenke, Phytologia 2: 108 (1944) & 183. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; Hodge, Revist. Fac. Nat. Agron. 7: 313. 1947; Moldenke, Phytologia 2: 500. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61, 64, 70, 162, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Résumé 68, 73, 221, 331, 332, 415, & 464. 1959.

For some reason unknown to me, all except one of the various collections cited by me in my monograph (1938) were omitted from the alphabetized list of collections at its close. An additional common name is "chararilla", probably a misprint for "chaparilla".

Fosberg states that the calyx of this species is bright lavender-purple and that the plant was found by him on a brushy river bluff with seeps of water, generally rather dry, at an altitude of 850 meters.

Additional citations: COLOMBIA: Antioquia: Caffaorras s.n. [Aug. 1946] (Fn-2784). Huila: Fosberg 19234 (N).

PETREA SCABERRIMA Moldenke

Literature: Moldenke in Fedde, Repert. 43: 14, 177--179, 210, 212, 218, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 19. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 31 & 97. 1942; Moldenke, Phytologia 2: 183. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 61 & 192. 1949; Moldenke, Résumé 68 & 464. 1959.

PETREA SWALLENI Moldenke

Literature: Moldenke in Fedde, Repert. 43: 16, 192--194, 210, & 220. 1938; Moldenke, Geogr. Distrib. Avicenn. 26. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 38 & 97. 1942; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 85. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 89 & 192. 1949; Moldenke, Résumé 104 & 464. 1959.

The fragment of Swallen 3127 cited by me in my monograph, page 194 (1938), as deposited in the Britton Herbarium at New York (N), has been transferred since to the herbarium of Cornell University (It) at Ithaca.

PETREA VOLUBILIS L.

Additional and corrected synonymy: ?Petroea volubilis Hort. apud Neumann, Ann. Fl. Pom. 1837-1838: 254--255, pl. 32. 1838. Petrea mexicana Humb. & Bonpl. apud Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea mexicana Willd. apud Steud., Nom. Bot.,

ed. 2, 2: 309, in syn. 1841. Petrea stapeliae Paxt. apud Steud., Nom. Bot., ed. 2, 2: 309. 1841. Petrea volubilis var.? mexicana Schlecht. apud Steud., Nom. Bot., ed. 2, 2: 309, in syn. 1841. Petrea ovata Mart. & Gal. apud Schau. in A. DC., Prodr. 11: 619, in syn. 1847. Petrea volubilis Gaertn. apud Schau. in A. DC., Prodr. 11: 618, in syn. 1847. Petraea volobulis L. apud Norton, Brazil. Fl. pl. 49. 1893. Petrea subserrata Bárcena apud Jacks., Ind. Kew. 2: 478. 1894. Petraea volubilis L. apud H. J. Lam, Verbenac. Malay. Arch. 26. 1919. Petraea stapelsiae Paxt. apud Britton & P. Wils., Scient. Surv. Porto Rico 6: 370. 1926. Petraea volubilis L. apud Britton & P. Wils., Scient. Surv. Porto Rico 6: 640, sphalm. 1930. Pehoia volubilis Jacq. ex Moldenke in Fedde, Repert. 43: 32, in syn. 1938. Petraea mexicana Schlecht. apud Moldenke in Fedde, Repert. 43: 33, in syn. 1938. Petraea staphylea Hort. ex Moldenke in Fedde, Repert. 43: 33, in syn. 1938. Petrea stapelesiae Paxt. ex Moldenke in Fedde, Repert. 43: 33, in syn. 1938. Petria volubilis L. ex Moldenke in Fedde, Repert. 43: 32, in syn. 1938. Petraea volubilis Willd. ex Moldenke, Prelim. Alph. List Invalid Names 34, in syn. 1940. Petrea volubilis Cham. ex Moldenke, Prelim. Alph. List Invalid Names 35, in syn. 1940. Petraeae volubilis L. apud Augusto, Fl. Rio Grande do Sul 227, sphalm. 1946. Petraea volubilis Jack apud Daniel, Verb. Cent. Antioq. 5. 1947. Petrea volubilis H.B.K. ex Moldenke, Alph. List Invalid Names Suppl. 1: 18, in syn. 1947. Petrea voluvis Bravo Hollis, Bol. Soc. Bot. Mex. 18: 20, sphalm. 1955.

Additional and corrected literature: L., Sp. Pl., ed. 1, 626. 1753; Houst., Reliq. 5: pl. 11. 1781; Gaertn., Fruct. & Sem. Pl. 2: 471, pl. 177, fig. 5. 1791; Lam., Tabl. Encycl. Méth. 3: pl. 539. 1797; Sims in Curtis, Bot. Mag. 17: pl. 628. 1803; Joh. Kerner, Hort. Sempervir. pl. 151. 1805; Mirbel, Hist. Nat. Pl. 15: pl. 104. 1805; J. E. Sm. in Rees, Cycl. 27, no. 2. 1814; Linnaea 6: 373. 1817; Steud., Nom. Bot., ed. 1, 606. 1821; Cham., Linnaea 7: 367--370. 1832; Neumann, Ann. Fl. Pom. 1837-1838: 254--255, pl. 32. 1838; Paxt., Mag. Bot. 4: 199--200. 1838; Steud., Nom. Bot., ed. 2, 2: 309. 1841; Mart. & Gal., Bull. Acad. Brux. 11 (2): 328--329. 1844; Schau. in A. DC., Prodr. 11: 618--619. 1847; Schau. in Mart., Fl. Bras. 9: 273--274. 1851; Griseb., Abhand. König. Gesell. Wissen. Götting. 7: 256. 1857; Héringc, Hort. Franç. 1858: pl. 6. 1858; Etingsh., Blatt-Skel. Dikot. 79, pl. 28, fig. 3. 1861; Bárcena, Notic. Cient. Estad. Hidalg. 31--32. 1877; Garden 12: 40. 1877; Lowis, Familiar Ind. Fl. pl. 6. 1878; Wittm., Garten-Zeit. Berlin 3: 277. 1884; Forbes, Wand. Nat. East. Arch. 2: 78--79, 225, & 514. 1885; Norton, Brazil. Fl. pl. 49. 1893; Jacks., Ind. Kew. 2: 478. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 158. 1894; Millsp., Field Columb. Mus. Publ. Bot. 1: 42. 1895; E. D. Merr., Bur. Govt. Lab. Philip. Bull. 6: 36. 1904; Gard. Chron. 45: 252. 1909; Trop. Agric. 33, no. 1, frontispiece. 1909; Velenovsky, Vergl. Morphol.

Pfl. 3: 923 & 1194, pl. 9, fig. 25. 1910; Queensland Agric. Journ. 27: pl. 24. 1911; Koord., Exkursionsfl. Java 3: 133. 1912; Bryan, Nat. Hist. Hawaii pl. 68, fig. 1. 1915; H. Hall., Meded. Rijks Herb. Leid. 37: 22. 1918; H. J. Lam, Verbenac. Malay. Arch. 26—27 & addenda. 1919; H. F. Macmillan, Handb. Trop. Gard. & Plant., ed. 1, 290. 1920; Standl., Contrib. U. S. Nat. Herb. 23: 1237. 1924; H. F. Macmillan, Handb. Trop. Gard. & Plant., ed. 3, 126 & 128. 1925; Britton & P. Wils., Scient. Surv. Porto Rico 6: 370 (1926) and 640. 1930; Standl., Field Mus. Publ. Bot. 3: 403. 1930; Stapf, Ind. Lond. 5: 39. 1931; Grey & Hubbard, List Fl. Bot. Gard. Atkins Inst. 157. 1933; Crevost & Pételot, Bull. Econom. Indochine 37: 1288—1289. 1934; Junell, Symb. Bot. Upsal. 4: 43 & 45, fig. 80—86. 1934; Potbury, Carnegie Inst. Wash. Publ. 465: 35, 36, & 79. 1935; Lundell, Veg. Petén 75, 146, & 183. 1937; Moldenke in Fedde, Repert. 43: 13, 15, 32—44, & 209—221. 1938; Moldenke, Geogr. Distrib. Avicenn. 5, 6, 8, 14—18, 33, 34, & 39. 1939; Moldenke, Carnegie Inst. Wash. Publ. 522: 188—189. 1940; Moldenke in Pulle, Fl. Surin. 4 (2): 290. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 17, 20—27, 29, 62, 64, 65, 74, & 97. 1942; Darlington & Janaki Ammal, Chromosome Atlas 271. 1945; E. D. Merr., Plant Life Pacific World 161, 170, & 274. 1945; Moldenke, Phytologia 2: 183—184 & 196—198. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 18. 1947; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Falcão, Guia Visitant. Jard. Bot. Rio Jan. 20. 1947; Daniel, Verb. Cent. Antioq. 5. 1947; Moldenke, Phytologia 2: 500—501. 1948; H. S. Gentry, Allan Hancock Atlantic Exped. Rep. 6: 33. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 31, 35—39, 41, 44, 47, 49, 54, 142, 144, 145, 147, 162, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; W. L. Phillips, Cat. Pl. Fairchild Trop. Gard. 33. 1949; Matuda, Am. Midl. Nat. 44: 576. 1950; F. Miranda, Veget. Chiapas 1: 255—256 (1952) & 372. 1953; Menninger, 1953 Cat. Flow. Trop. Trees 59. 1953; Roig, Dicc. Bot. 1: 764 and 2: 1077. 1953; Lombardo, Invent. Pl. Cult. Montevid. 176. 1954; Menninger, 1954 Price List [11] & 1955 Price List n.p. 1954; Bravo Hollis, Bol. Soc. Bot. Mex. 18: 20. 1955; Bravo Hollis, Anal. Inst. Biol. Mex. 26 (2): 295. 1955; Menninger, 1956 Price List [7] (1955) and 1957 Price List [9]. 1957; Alain in León & Alain, Fl. Cub. 4: 297, 298, & 544, fig. 128. 1957; Santapau, Fl. Purandhar 104. 1957; Menninger, 1958 Price List [7] (1958) & 1959 Price List [6]. 1958; Moldenke, Résumé 37, 42—45, 47, 48, 52, 55, 58, 62, 163, 170, 184, 187, 188, 190, 192, 197, 221, 329—333, & 464. 1959; Reitz, Sellowia 11: 76 & 121. 1959; Menninger, 1960 Price List Flow. Trees [10]. 1960.

Additional and corrected illustrations: Gaertn., Fruct. & Sem. Pl. 2: pl. 177, fig. 5. 1791; Lam., Tabl. Encycl. Méth. 3: pl. 539. 1797; Joh. Kerner, Hort. Sempervir. pl. 151. 1805; Neumann, Ann. Fl. Pom. 1837—1838: pl. 32 [in color]. 1838; Paxt., Mag. Bot. 4: 199 [in color]. 1838; Hérincq, Hort. Franç. 1858: pl. 6. 1858; Lewis, Familiar Ind. Fl. pl. 6 [in color]. 1878; Wittm., Garten-Zeit. Berlin 3: 277. 1884; Norton, Brazil. Fl. pl. 49. 1893; Gard. Chron. 45: 252. 1909; Trop. Agric. 33, no. 1, front-

ispiece. 1909; Velenovsky, Vergl. Morphol. Pfl. 3: pl. 9, fig. 25. 1910; Queensland Agric. Journ. 27: pl. 24. 1911; Bryan, Nat. Hist. Hawaii pl. 68, fig. 1. 1915; H. F. Macmillan, Handb. Trop. Gard. & Plant., ed. 1, 290 (1920) and ed. 3, 126 & 128. 1925; Crevost & Pételot, Bull. Econom. Indo-chine 37: 1288. 1934; Alain in León & Alain, Fl. Cub. 4: fig. 128. 1957.

Additional common names recorded for this species are "bejuco del caballo", "bông xanh", "capital lila", "capitan lila", "capitán lila", "ci contre", "cipó azul", "coamecate azul", "flor de Sta. Rita", "hoa tía", "hoja chigue", "rampelas", "raspa sombrero", "sandpaper-vine", "tortilla tostada del caballo", "touca de viúva", and "viuvinha". Menninger says that the name "queen's wreath" is applied by florists in Florida to Antigonon leptopus Hook. & Arn. of the Polygonaceae. He describes our plant as a "magnificent woody evergreen vine from Brazil, flowering four times a year, with clusters of violet-like flowers of two shades of blue, in hanging clusters". He offers 2--5-foot plants at \$1.50 per foot. Phillips, in the reference cited above, says that the species is from "Cuba, Brazil". Grisebach, in the reference also cited above (1857), records the species from Guadeloupe, but I have seen only P. kohautiana Presl from that island. The Petraea volubilis Jacq. and Petrea volubilis Jacq. referred to by me in my monograph, page 32 (1938), actually are P. kohautiana. The P. subserrata referred to and illustrated by Crevost & Pételot in the reference cited above (1934), with P. kohautiana, P. retusa, P. serrata, and P. volubilis given as synonyms, is actually P. volubilis L.

Daniel, in the reference cited above, states that Dr. Enrique Pérez Arbeláez records the names "chaparro" and "azulito" and says "es un lindo bejuco cultivado par sus ramitas violáceas, sus brácteas aterciopeladas en ternas." Steyermark states that the "bracts" [=calyx?] are pale-purple and the corolla darker purple. Matuda reports that the species is often cultivated in Mexico. It is also said to be cultivated in many gardens in the eastern and central portions of Madagascar. Khid Suvarnasuddhi, in a letter to me dated July 14, 1953, asserts that it is only found in cultivation in Thailand, never in the wild state. Santapau reports it to be cultivated in Bombay. The Marquand collection and Herb. Hort. Bot. Bogor. 22038, cited below, do not actually have any definite indication on their labels that they originated from cultivated material, but I assume that they did.

In the Glass Flower Exhibit at Harvard University model 639 is Petraea volubilis and shows longitudinal and transverse sections of the ovary, stamen, pistil, and an opened corolla

Wilson describes our plant as a "liana common in virgin forest, 900 feet altitude" in Guatemala. In Mexico it has been found on hills, in limestone roadcuts, and in loam on limestone among trees, at 1200 feet altitude, flowering in March, April, and June. Pringle 5003 was misidentified and widely distributed as "Petraea arborea H.B.K."

Martin reports that P. volubilis may have a stem with a diameter of 15 cm. at breast height and blue flowers in February. Hurd describes it as a vine climbing on orange trees, growing "very high in some places", with purplish flowers in April; Smith found it to grow 15 feet tall, while Wonderly describes it as a woody vine with purplish-blue flowers, growing on shady rocky slopes.

Additional citations: MEXICO: Campeche: C. D. Mell s.n. [near Campeche, Feb. 1945] (Du--350273). Chiapas: Wonderly 32 (Mi). San Luis Potosí: L. I. Davis s.n. [south of Valles, April 13, 1946] (Au--172014); Edw. Palmer 1064 (Pa); Pringle 5003 (Gg--421281, N, St). Tamaulipas: Crutchfield & Johnston 5201 (Au--178562); L. I. Davis s.n. [Nuevo Morelos, April 9, 1946] (Au--172013); R. P. Hurd 72 (Mi); P. S. Martin 31 (Mi); Smith & Barkley 174174 (Au--169719). Vera Cruz: C. L. Smith 1017 (Mi, N, Tl). GUATEMALA: Zacapa: Steyermark 42149 (N). PANAMA: Barro Colorado Island, Canal Zone: Shattuck 412 (Cz); Silvestre Avilas 14 (Cz). CUBA: Havana: León s.n. (Vi--4190). INDIA: Madras: Kuriakose s.n. [25.2.33] (N); Saulière 188 (Bz--22036). CHINA: Kwangtung: Dahlström 361 (S). RIOUW ARCHIPELAGO: Bintan: Bttnemeijer 6487 (Bz--22035). SUMATRA: Jacobson 28 (Bz--22034). JAVA: Bakhuizen van den Brink Jr. 2700 (Ut--24909a); Brinkman 52 (Bz--22028); Forbes 403 (Bz--22032, Bz--22033); Laeuwen 445 (Bz--22027); Lörzing 653 (Bz--22026). CULTIVATED: Argentina: Ruiz Leal 44200 (Ss). Belgian Congo: Vanderyst 35014 (Br). Belgium: M. Martens s.n. [h. b. Brux. 1851] (Br). Cameroons: Winkler 611 (B). Cuba: Auffa s.n. [Herb. Estac. Exp. Agron. 11516] (Es); Ekman 13050 (N); Killip 45530 (Sm); Moldenke & Moldenke 19887 (Es, Lg, N), 20600 (N). Dominican Republic: H. A. Allard 13175 (S). Florida: H. N. Moldenke 21476 (Hk). Hawaiian Islands: E. C. Marquand s.n. [February 28, 1938] (N); L. W. Shattuck s.n. (Dt). India: Herb. Hort. Bot. Bogor. 22038 (Bz); Herb. Hort. Bot. Calcuttensis s.n. (Bz--22037). Isla de Pinos: Killip 43554 (Z). Java: Backer 33189 (Bz--22030, Bz--22031), 33190 (Bz--22029); Bakhuizen van den Brink 2721 (Bz--22021); Herb. Hort. Bot. Bogor. X.F.2 (Bz--22024, Bz--22025, Bz--25598, Bz--25599), X.F.3 (Bz--22022, Bz--22023), XV.E.72 (Bz, Bz, Bz, N), XV.E.72a (Bz--26281, Bz, Bz), XV.E.73 (Bz--26282, Bz--26283, N), XV.E.73a (Bz--26552), XV.E.74 (Bz--26284, Bz, Bz, N), XV.E.74a (Bz), XV.E.75 (Bz--26285, Bz--26286, N). Madagascar: Herb. Jard. Bot. Tananarive 882 (P). Massachusetts: R. E. Torrey s.n. [Amherst, Mar. 3, 1939] (Ms). Mexico: Moldenke & Moldenke 19825 (N). Sarawak: Clemens & Clemens 20584 [field no. 6597] (N).

PETREA VOLUBILIS var. ALBIFLORA (Standl.) Moldenke

Additional and corrected literature: Standl., Field Mus. Publ. Bot. 11: 140. 1932; Moldenke in Fedde, Repert. 43: 15, 44--45, 209, & 219. 1938; Moldenke, Geogr. Distrib. Avicenn. 15. 1939;

Moldenke, Carnegie Inst. Wash. Publ. 522: 189—190. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 21 & 97. 1942; Moldenke, Phytologia 2: 198. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 36 & 192. 1949; Moldenke, Résumé 43, 221, 332, 333, & 464. 1959.

Additional citations: CULTIVATED: St. Vincent: Morton 5435 (W—1884345).

PETREA VOLUBILIS var. PUBESCENS Moldenke

Additional synonymy: Petrea consanguinea Klotzsch apud E. J. Salisb., Ind. Kew. Suppl. 10: 168, in syn. 1947.

Literature: Cham., Linnaea 7: 367. 1832; Mart. & Gal., Bull. Acad. Brux. 11 (2): 329. 1844; Moldenke in Fedde, Repert. 43: 15, 45—46, 209—216, & 218—220. 1938; Moldenke, Alph. List Common Names 8, 10, 12, & 26. 1939; Moldenke, Geogr. Distrib. Avicenn. 14—18 & 39. 1939; Moldenke, Prelim. Alph. List Invalid Names 34 & 36. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 17, 20—24, 74, & 97. 1942; Moldenke, Alph. List Invalid Names 34 & 35. 1942; Moldenke, Phytologia 2: 108 (1945) & 198. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 168. 1947; Moldenke, Phytologia 2: 501. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 31, 35, 37—39, 41, 162, & 192. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 10. 1949; Moldenke, Résumé 37, 42, 44, 45, 47, 48, 221, 331, 332, & 464. 1959.

An additional vernacular name recorded for this variety is "jasmin o'coamecate azul". It has been collected at 550—950 m. altitude in Alajuela, flowering in February and August, fruiting in March, growing as a vine on fence rocks.

Additional citations: MEXICO: Vera Cruz: Linden 18, in part (Br). HONDURAS: Morazán: Williams & Molina R. 11943 (M1). COSTA RICA: Alajuela: Brenes 20468 [3] (N), 21462 [3] (N); J. León 1746 [Herb. Inst. Interam. Turrialba 932] (W—2021496).

PETREA VOLUBILIS L.

Additional citations: GUATEMALA: Alta Verapaz: C. L. Wilson 334 (Dt). El Petén: H. H. Bartlett 12559 (Du—353946).

 ADDITIONAL NOTES ON THE GENUS AEGIPHILA. XIV

Harold N. Moldenke

In addition to the abbreviations for the names of herbaria listed by me in Phytologia 5: 154—159 (1955) and 6: 242 (1958), the following are also being employed in this series of notes: Bd = Herbarijm Bradeanum, Rio de Janeiro, Brazil; Bs = Basler Botanische Gesellschaft, Basel, Switzerland; Gl = Museu Goeldi, Belém, Pará, Brazil; Gp = Ontario Agricultural College, Guelph,